

Spinhirne Selected as Tech Museum Laureate



James D. Spinhirne (Code 912) (right) receives an "Environmental" Laureate Award for his Micro Pulse Lidar technology.

Goddard's James D.

Spinhirne (Code 912) was selected as one of 25 laureates for The Tech Museum Awards: Technology Benefiting Humanity. Chosen as one of five finalists (out of 96 nominations) in the "Environment" category for his Micro Pulse Lidar (MPL), Dr. Spinhirne attended the October 15th awards gala hosted by Al Roker of NBC's *Today* show in San Jose, California.

MPL is a ground-based lidar system that enables autonomous monitoring of atmospheric clouds and aerosol scattering. Unlike previous lidar systems, MPL is an eye-safe, small, simple, reliable, long-range system that operates unattended and is significantly enhancing atmospheric research.

To be selected as a Tech Museum finalist, applicants must demonstrate:

- That the use of technology significantly improves the human condition in

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Goddard's Tech Management Work toward Common Goals



Ronald Polidan is Chief Technologist for Goddard Space Flight Center.

The Office of Technology

Transfer has been working more closely with Goddard's Chief Technologist **Ronald Polidan** to find ways to efficiently achieve their mutually compatible goals. Dr. Polidan also is the Acting Head of the Goddard Technology Management Office (GTMO) and serves as the Chair of the Technology Federation.

"There's a new emphasis in tech transfer beyond the traditional spin-out of our technologies," explained **Nona Cheeks**, Chief of the Office of Technology Transfer. "We're seeking more opportunities for spin-in to ensure that the NASA Centers are getting what they need, either from within NASA or from outside labs and companies. This new emphasis fits perfectly with the Chief Technologist's goals. So working closer just made sense."

As Goddard's Chief Technologist, Dr. Polidan develops the Center's roadmap for technologies as applied to NASA missions, sponsoring early R&D activities as appropriate. In addition, he coordinates with the R&D chiefs from other NASA Centers and other government laboratories, looking for opportunities to partner and collaborate. Similarly, the Chief Technologist sponsors and helps set up the exchange fellowship program to benefit research and technology knowledge sharing within Goddard.

"Information sharing is key to closing the gap between scientists and engineers," said Dr. Polidan. "Scientists make some of the most important technological advancements, and engineers find a way to put those advancements into practical application. By working together earlier, including joint proposal development, these communities can make dramatic progress."

The Office of Technology Transfer is working closely with the Chief Technologist Office in identifying and arranging partnerships. "Forming partnerships is a major part of what we do," said Ms. Cheeks. "I think that's an area where the Office of Technology Transfer can be particularly helpful."

For more information, see the GTMO Web site (<http://gsfctechnology.gsfc.nasa.gov>). ■

Step 3: Seeking a Partner/Licensee

- If the assessment of your technology—see the Fall 2003 issue of *Goddard Tech Transfer News* for more about technology assessment—recommends patenting and pursuit of transfer, the Office of Technology Transfer begins securing the intellectual property rights and finding a viable partner/licensee.

Note: This series is examining the steps associated with spin-out of a Goddard innovation to a non-NASA application. Future issues of *Goddard Tech Transfer News* will explore the technology spin-in process.

What is the difference between a partnership and a license?

A partnership involves ongoing collaboration between Goddard and the partner. For example, the partner might use Goddard facilities, personnel, and/or equipment to further develop the technology for the commercial or non-NASA application. Depending on the arrangement, Goddard is reimbursed financially, or the partner contributes its own resources to further a NASA mission. A license agreement grants the licensee the rights (either fully or partially exclusive or nonexclusive) to manufacture or use the technology. The specific arrangement depends on the technology and its readiness to be transferred to the new application as well as what the partner/licensee can offer NASA.

How does the Office of Technology Transfer find partners/licensees for my technology?

Because the assessment includes interviews with potential users and licensees, identifying most of the appropriate contacts has been done. Some additional research might be conducted to find others. Once the list of contacts is finalized,

the Office explains the partnership/licensing opportunity, encouraging them to apply for use or license of the technology.

How does the Office communicate with these potential partners/licensees?

We use a variety of communication tools, according to what is most effective for the situation. The most common are the following:

- **Technology Opportunity Sheets**—One-page announcements succinctly presenting the technology and its potential applications and benefits
- **Web sites**—Some technologies can only be fully understood with many details, which are best presented online
- **Industry briefings**—Meetings hosted by NASA to explain the technology and the partnership/licensing opportunity.
- **Trade show exhibits**—Displays and/or presentations that introduce technologies available for partnership/licensing. (See the article on page 3 for more information about upcoming trade shows.)

What happens when one of the contacts expresses interest in becoming a partner/licensee?

The specifics vary from case to case, but in general the Office of Technology Transfer requests a project or transfer plan that provides details about the organization, how it plans to use the technology, its financial stability, and the proposed

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researcher profile:

James C. Tilton

Code 935 • 21 years at NASA

• **Education:** B.A., electrical engineering, environmental science & engineering, and anthropology (cum laude), Rice

Univ.; M.E.E., electrical engineering, Rice Univ.; M.S., optical sciences, Univ. of Arizona; Ph.D., electrical engineering, Purdue Univ. • **Born:** Burlington, Wisconsin

What inventions are you currently working to transfer?

I am currently working to transfer my hierarchical segmentation software (HSEG) and related software. HSEG provides a

new approach to image analysis, focusing on image regions—and how they change from a coarse-to-fine perspective—rather than just pixels.

What has the Office of Technology Transfer done to introduce your invention to new users?

The Office has set up a Web page featuring HSEG, which lets prospective users acquire a demonstration version, and set up/facilitated several interviews. They also helped with two patent applications and created a poster for a trade show.

What do you see as the future for your technology?

The software already has been licensed to Bartron Medical Imaging. Eventually I would like to see it applied to a wide range of Earth remote sensing image analysis problems, knowledge discovery and data mining in imagery data archives, and medical image analysis.

Any advice for your colleagues?

File those disclosure forms! Once you do, there will be many opportunities to publicize your development through the Office of Technology Transfer. ■



National Association of Seed and Venture Funds (NASVF) Conference

In early November, NASA was cosponsor for the NASVF conference in Baltimore, Maryland. In keeping with the theme of the event—Innovations in Early-Stage Investing—NASA explored ways to foster ventures and collaborations to capitalize on the enhanced economic growth, competitiveness, and quality of life opportunities created by NASA's cutting-edge research and technological innovation. Investment by seed and venture funds accelerates the R&D that leads to commercial products—products that might be procured to advance government missions (i.e., spin-in).

Goddard played an active role in this event, presenting the Hilbert-Huang Transformation (HHT) Method. Developed by Goddard's **Norden Huang** (Code 971), HHT is a technology innovation that has significant potential for commercial and government program success. HHT was presented, and then tech-savvy investors evaluated the opportunity. Several suggestions were made on positioning the technology in a start-up environment, and potential interested companies were identified. These leads are being pursued. ■



Goddard and Nanotechnology Events

Goddard's Office of Technology Transfer (OTT) played a leading role in helping organize the NASA *Tech Briefs* Nanotech 2003 Conference held in Boston in late October. Originally conceived as an opportunity to feature a single Goddard technology, the event grew into a 2-day event. **Darryl Mitchell** of the OTT designed the content of the program, finding more than 40 speakers from government, academia, and industry. Speakers from Goddard included **Jeannette Benavides** (Code 562); **Nona Cheeks**, Chief of the OTT; **Janet Jew** of the NASA SBIR/STTR Program Office; **Ron Polidan**, Chief Technologist; **Dan Powell** (Code 542); and **Edward Sittler** (Code 692). NASA's **Benjamin Neumann**, Director of Innovative Technology Transfer Partnerships, made the opening remarks.

OTT and Dan Powell also participated at the Greater Washington Nanotechnology Alliance's first special topics symposium. Held on November 25th in Laurel, Maryland, this day-long event was filled with presentations on topics ranging from public interest

issues to technical practices, research, and potential/developing applications. The event—as well as the Alliance itself—is mainly a knowledge-sharing and networking opportunity. “By knowing who the key players are, what they're looking at, and where things can be combined, you can direct your efforts where they bring the most value,” said Mr. Powell, who helped found the Alliance. “There's not enough money for all of us to be working alone, so we'd better work together.” ■



NASA's Top Tech Priorities

(Source: MSM Program)

- Materials
- Nanotechnology
- Computing
- Sensing
- Low-power electronics
- Power systems ■

Take Your Innovations to Trade Shows for Partnership/Licensing

As discussed in the article on page 2, trade shows are a key way for the Office of Technology Transfer to promote the spin-out opportunities at Goddard. Below is a list of upcoming trade shows. If you think your technology would be of interest to the attendees at one or more of these shows, please contact the Office by the indicated deadline. ■

<i>Event</i>	<i>Where, When</i>	<i>Deadline for Contacting Office of Technology Transfer</i>
Society for the Advancement of Material and Process Engineering (SAMPE)	Long Beach, CA; May 16–20	March 19
Sensors Expo & Conference	Detroit, MI; June 7–10	April 9
NASA/TEDCO Technology Showcase	Greenbelt, MD; July 7	May 7

New technologies reported: 23

New technologies were reported by the following civil servants, contractors, and universities.

Civil Servants

Code 500

Parminder Ghuman
Brian Jamieson
Murzy Jhabvala
Richard Katz
Gary Mosier
Harry Shaw
Salman Sheikh
Eric Stoneking

Code 900

Donald Coyle
Norden Huang
David Le Vine

Contractors

Constellation Software Engineering, Corp.
Dynamic Range Corp.
The Hammers Company
Lockheed Martin
Mink Hollow Systems Inc.
Naval Surface Warfare Center
Oak Ridge National Laboratory
Radiation Monitoring Devices
Skilled Systems Inc.
Texas A&M Research Foundation
Texas Engineering Experiment Station
Kinetics Inc.

Universities

Indiana University
Johns Hopkins University (JHU)
JHU Applied Physics Laboratory

Morgan State University
Tufts University
University of California
University of Illinois at Urbana-Champaign
University of New Hampshire

Licenses/Partnerships: 2

- Method for Implementation of Recursive Hierarchical Segmentation on Parallel Computers, **James Tilton** (Code 935), licensed to Bartron Medical Imaging, LLC of New Haven, Connecticut
- Advanced Spacecraft and Integration & System Test Software (ASIST), **Edwin H. Fung** (Code 584), licensed to DesignAmerica, Inc. of Annapolis, Maryland

Issued Patents: 3

Innovators receive a \$500 to \$1,000 award for an issued patent

- U.S. Patent #6,640,949: 1-Way Bearing, **John Vranish** (Code 544)
- U.S. Patent #6,631,325: Computer Implemented Empirical Mode Decomposition Method Apparatus, and Article of Manufacture Utilizing Curvature Extrema, **Norden Huang** (Code 971) and **Zheng Shen** (Johns Hopkins Univ.)
- U.S. Patent #6,648,522: Fiber Optic Connector Polishing Fixture Assembly, **John Kolazinski** (Code 565) and **Joe Moszczewski** (Jackson and Tull Inc.)

Patent Applications Filed: 3
Provisional Patents Filed: 5 ■

Tech Briefs in 2003

Innovators receive a \$350 award for a published Tech Brief

Code 500

Julie Crooke
Gary Davis
Carlos Hernandez
Maurice Lewis

Code 600

Donald Jennings
George McCabe
Dennis Reuter

Code 900

Norden Huang

Contractor

Richard Rallison - Ralcon, Inc. ■

Spinhirne Selected (continued from page 1)

- one of five universal areas: economic development, education, environment, equality, and health
- Evidence that a serious problem or challenge with broad significance is addressed
 - A noteworthy contribution that surpasses previous or current solutions
 - A novel application that represents a breakthrough or a creative adaptation of an existing technology

- Its potential to serve as an inspiration or model for others

"It was an honor," said Dr. Spinhirne. "To be selected as a finalist, particularly by such a learned panel of judges, is definitely a level of recognition beyond what I expected."

For more information on MPL and its use, see <http://mplnet.gsfc.nasa.gov/>. For more information about The Tech Museum, see <http://www.thetech.org/techawards/index.cfm>. ■

Step 3: Seeking a Partner/Licensee (continued from page 2)

terms for the agreement. Once the plan and other application forms have been received, negotiations begin. ■

Next issue – Step 4: Partnership/License Agreement

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